

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
25 September 2003 (25.09.2003)

PCT

(10) International Publication Number  
**WO 03/078967 A3**

(51) International Patent Classification<sup>7</sup>: C12N 5/06, 5/08, 15/87

(21) International Application Number: PCT/US03/08259

(22) International Filing Date: 12 March 2003 (12.03.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/365,022 12 March 2002 (12.03.2002) US

(71) Applicant (*for all designated States except US*): OREGON HEALTH & SCIENCE UNIVERSITY [US/US]; Office of Technology Management, L335, 3181 SW, Sam Jackson Park Road, Portland, OR 97201 (US).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): BAETSCHER, Manfred [US/US]; 6900 SE 35th Avenue, Portland, OR 97202 (US). DEKONING, Jenefer [US/US]; 6407 NW Dogwood Drive, Vancouver, WA 98663 (US). BOWER, Anne [US/US]; 2147 Cedar Street, Forest Grove, OR 97116 (US).

(74) Agents: HAJOS, Brigitte, A. et al.; Townsend and Townsend and Crew LLP, Two Embarcadero Center, 8th Floor, San Francisco, CA 94111 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— *of inventorship (Rule 4.17(iv)) for US only*

Published:

— *with international search report*  
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:  
18 December 2003

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

WO 03/078967 A3

(54) Title: STEM CELL SELECTION AND DIFFERENTIATION

(57) Abstract: Isolated mammalian stem cells sustainable in culture under glycolytic conditions and which maintain the potential to differentiate are provided. Further encompassed by the invention are functionally distinct subpopulations of stem cells with increased differentiation permissiveness.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/08259

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12N 5/06, 5/08, 15/87  
 US CL : 435/325, 366, 455

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
 U.S. : 435/325, 366, 455

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
 Palm inventor search and review of provisional cited

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 STN, Medline

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A,P	US 2002/0076816 A1 (DAI et al.) 20 June 2002 (20.06.2002) entire reference.	1-27
X	WO 96/2236 A1 (WISCONSIN ALUMNI RESEARCH FOUNDATION) 25 July 1996 (25.07.1996) entire disclosure and claims.	1-18, 24-27
---		-----
Y		19-23

Further documents are listed in the continuation of Box C.

See patent family annex.

### \* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

19 August 2003 (19.08.2003)

Date of mailing of the international search report

27 OCT 2003

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450

Faxsimile No. (703)305-3230

Authorized officer

Joseph Woitach

Telephone No. 703 308-1235